

Application Serial No. 10/624,810
Response Dated: November 2, 2006

Amendments to the Claims

This listing of the claims as amended will replace all prior versions and listings of the claims in this application:

Listing of the Claims:

1. (Currently amended) A method for producing multi-color concrete, comprising:
 - (a) providing a first spray color dispersion comprising a pigment and a polymer binding agent dispersed in water;
 - (b) discharging a wet concrete mix from a vessel;
 - (c) spraying the first spray color dispersion onto the wet concrete mix discharging from the vessel to form a pattern of applied color in the wet concrete mix;
 - (d) reacting the polymer binding agent with the wet concrete mix to form an irreversible integral structure with the pigment and the cement that is insoluble in water and remains as part of the concrete matrix; and
 - (e) forming a resultant structure of cured concrete.
2. (Previously presented) The method for producing multi-color concrete according to claim 1, wherein spraying is carried out using at least one nozzle to spray the first spray color dispersion under pressure.
3. (Previously presented) The method for producing multi-color concrete according to claim 1, further including providing a second spray color dispersion comprising a pigment and a polymer

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binding agent dispersed in water, and spraying the second spray color dispersion onto the wet concrete mix.

4. (Previously presented) The method for producing multi-color concrete according to claim 3, wherein spraying is carried out using a plurality of nozzles, wherein at least one nozzle of the plurality of nozzles sprays the first spray color dispersion and at least one nozzle of the plurality of nozzles sprays the second spray color dispersion.

5. (Previously presented) The method for producing multi-color concrete according to claim 1, including controlling a color pattern using timers that control the spraying.

6. (Previously presented) The method for producing multi-color concrete according to claim 5, comprising controlling the color pattern by spraying in pulses such that sprays of various lengths of time produce a pattern.

7. (Previously presented) The method for producing multi-color concrete according to claim 1, wherein spraying is carried out using at least one nozzle having a flow pattern.

8. (Previously presented) The method for producing multi-color concrete according to claim 7, wherein the flow pattern is selected from the group consisting of a solid cone, a hollow cone and a flat spray.

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9. (Previously presented) The method for producing multi-color concrete according to claim 1, wherein spraying is carried out by spraying in the form of a stream.

10. (Previously presented) The method for producing multi-color concrete according to claim 1, wherein spraying is carried out by using at least one spray nozzle and varying the distance between the at least one nozzle and the wet concrete mix.

11. (Currently amended) A method for producing multi-color concrete, comprising:

- (a) providing a first spray color dispersion comprising a pigment and a polymer binding agent dispersed in water;
- (b) discharging a wet concrete mix from a vessel;
- (c) spraying the first spray color dispersion onto the wet concrete mix discharging from the vessel to form a pattern of applied color in the wet concrete mix;
- (d) binding the polymer binding agent with the wet concrete mix to form an irreversible integral structure with the pigment and the cement that is insoluble in water and remains as part of the concrete matrix; and
- (e) curing the concrete[[:]]

~~whereby a resultant polymer structure is insoluble in water and remains as part of the cured concrete, thereby preserving the integrity of the pattern of applied color highlight .~~

12. (Previously presented) The method for producing multi-color concrete according to claim 11, wherein the polymer binding agent is selected from the group consisting of water borne

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urethane, acrylic emulsions, water soluble acrylic polymers, water soluble vinyl acetate, acrylic colloids, styrene acrylic resins, styrene acrylic resin solutions, acrylic copolymer latexes, and mixtures thereof.

13. (Previously presented) The method for producing multi-color concrete according to claim 11, wherein the first spray color dispersion further includes at least one filler to produce a desired effect.

14. (Previously presented) The method for producing multi-color concrete according to claim 11, wherein spraying is carried out by using at least one nozzle to spray the first spray color dispersion under pressure.

15. (Previously presented) The method for producing multi-color concrete according to claim 11, further comprising:

- (a) providing a second spray color dispersion comprising a pigment and a polymer binding agent dispersed in water, wherein said second spray color dispersion is different from said first spray color dispersion;
- (b) spraying the second spray color dispersion onto the wet concrete mix discharging from the vessel to form a pattern of applied color in the wet concrete mix; and
- (c) binding the polymer binding agent of said second spray color dispersion with the wet concrete mix.

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16. (Previously presented) The method for producing multi-color concrete according to claim 15, wherein spraying is carried out using a plurality of nozzles, wherein at least one nozzle of the plurality of nozzles sprays the first spray color dispersion and at least one nozzle of the plurality of nozzles sprays the second spray color dispersion.

17. (Previously presented) The method for producing multi-color concrete according to claim 11, further comprising controlling a color pattern using timers that control the spraying.

18. (Previously presented) The method for producing multi-color concrete according to claim 17, wherein controlling the color pattern is carried out by spraying in pulses such that sprays of various lengths of time produce a pattern.

19. (Previously presented) The method for producing multi-color concrete according to claim 11, wherein spraying is carried out using at least one nozzle having a flow pattern.

20. (Previously presented) The method for producing multi-color concrete according to claim 14, wherein the at least one nozzle produces a pattern selected from the group consisting of a solid cone, a hollow cone, or a flat spray.

21. (Previously presented) The method for producing multi-color concrete according to claim 11, wherein spraying is carried out by spraying in the form of a stream.

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22. (Previously presented) The method for producing multi-color concrete according to claim 14, further comprising varying the distance between the at least one nozzle and the wet concrete mix.

23. (Previously presented) The method for producing multi-color concrete according to claim 11, wherein the pigment comprises about 2% to about 60% by weight of the first spray color dispersion.

24. (Previously presented) The method for producing multi-color concrete according to claim 11, wherein the polymer binding agent comprises about 1% to about 60% by weight of the first spray color dispersion.

25. (Withdrawn) A system for coloring concrete, comprising:

- (a) at least one vessel containing a spray color dispersion, said spray color dispersion comprising a pigment water dispersion and at least one polymer binding agent, the at least one polymer binding agent capable of reacting with wet concrete mix to form an irreversible integral structure of the pigment and the concrete;
- (b) a spray gun associated with each vessel, each spray gun connected to its associated vessel by a conduit;
- (c) a pump associated with each vessel to move the spray color dispersion contained in the vessel to the spray gun associated with the vessel;
- (d) an apparatus for moving fresh concrete relative to each spray gun; and

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- (e) a controller for controlling spraying of the spray color dispersion in each vessel through each spray gun.

26. (New) The method for producing multi-color concrete according to claim 1, wherein the polymer binding agent comprises a water borne urethane polymer.

27. (New) The method for producing multi-color concrete according to claim 1, wherein the polymer binding agent comprises an acrylic polymer emulsion.

28. (New) The method for producing multi-color concrete according to claim 1, wherein the polymer binding agent comprises a water soluble acrylic polymer.

29. (New) The method for producing multi-color concrete according to claim 1, wherein the polymer binding agent comprises a water soluble vinyl acetate polymer.

30. (New) The method for producing multi-color concrete according to claim 1, wherein the polymer binding agent comprises an acrylic colloid polymer.

31. (New) The method for producing multi-color concrete according to claim 1, wherein the polymer binding agent comprises a styrene acrylic resin.

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32. (New) The method for producing multi-color concrete according to claim 1, wherein the polymer binding agent comprises a styrene acrylic resin solution.

33. (New) The method for producing multi-color concrete according to claim 1, wherein the polymer binding agent comprises an acrylic copolymer latex.

34. (New) The method for producing multi-color concrete according to claim 1, wherein the polymer binding agent comprises a mixture of more than one of:

- a water borne urethane,
- an acrylic polymer emulsion,
- a water soluble acrylic polymer,
- a water soluble vinyl acetate polymer,
- an acrylic polymer colloid,
- a styrene acrylic resin,
- a styrene acrylic resin solution, or
- an acrylic copolymer latex.

35. (New) The method for producing multi-color concrete according to claim 3, further comprising reacting the polymer binding agent of the second spray color dispersion with the wet concrete mix to form an irreversible integral structure with the pigment and the cement that is insoluble in water and remains as part of the concrete matrix.